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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,042	07/25/2003	Michael Marquant	21084 US/pd-d	4047

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BARNES & THORNBURG LLP  
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INDIANAPOLIS, IN 46204

EXAMINER
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HYUN, PAUL SANG HWA

ART UNIT	PAPER NUMBER
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1797

NOTIFICATION DATE	DELIVERY MODE
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08/05/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

indocket@btlaw.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/628,042	<b>Applicant(s)</b> MARQUANT ET AL.	
	<b>Examiner</b> PAUL S. HYUN	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 July 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,6-8 and 11-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-8 and 11-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

The after-final Remarks filed by Applicant on July 12, 2010 have been acknowledged. Applicant's arguments with respect to the rejections cited in the previous Office action have been considered and they are persuasive. The Examiner agrees with Applicant that the "planar disposable comprising electrodes" disclosed by Husar does not refer to element 17 shown in Figure 2. Therefore, the rejections have been withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims **1, 2, 6-8, 15-19, 21 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamos et al. (US 2002/0053523 A1) in view of Husar (US 2002/0061260 A1).

Lamos et al. disclose an electrochemical sensor comprising a base layer 500 (support layer), a top layer 508 (support layer), and a spacer 504 (transport layer) situated between layers 500 and 508 (see Figs. 6A-6C). The spacer comprises two sections separated by a gap that defines a channel 506. The surface of layer 500 that faces the spacer comprises a working electrode 502 made from gold (see [0087]), and the surface of layer 508 that faces the spacer comprises counter electrodes 510 and 512 made from silver-silver chloride mixture (see [0103]). The electrodes are coated onto layers 500 and 508 (see [0088]). Each electrode terminates at a contact region (503, 511, 513) that is configured to connect to external electronics. The spacer 504 can be made from

a double-sided adhesive that secures layers 500 and 508 (see [0124]). The sensor can further comprise a vent 574 that leads to an exterior of the sensor (see [0129]). The invention disclosed by Lamos et al. differs from the claimed invention in that Lamos et al. do not disclose a plurality of sensors arranged in a step-like manner such that the electrodes of each sensor extend beyond the adjacent sensor.

Husar discloses a microfluidic device for analyzing liquid samples (see Fig. 7). The depth of the microfluidic channel differs at various locations to facilitate fluid movement and collection (see Fig. 2). The device comprises a plurality of sensors that are stacked together so that different characteristics of a sample can be detected at the same time (see [0196]). The layers are arranged in a staggered formation so that the electrical contact 14 of each sensor is individually accessible by a sensing device. In light of the disclosure of Husar, it would have been obvious to one of ordinary skill in the art to stack a plurality of the sensors disclosed by Lamos et al. in a staggered arrangement such that the contact region of each electrode is accessible, and subsequently measure the different characteristics of a sample. It also would have been obvious to one of ordinary skill in the art to vary the depth of the channel disclosed by Lamos et al. to facilitate the flow and collection of the sample.

With respect to claim 19, it should be noted that the claimed control site is limited by the recitation of the intended use of the control site rather than what the control site actually comprises. The limitation “for checking the filling... control site” does not further limit the structure of the control site. Thus, any

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location of channel 506 disclosed by Lamos et al. can be construed to be the claimed control site.

Claims **4 and 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamos et al. in view of Husar as applied to claims 1, 2, 6-8, 15-19, 21 and 22 above, and further in view of Oloman et al. (US 4,118,305).

Neither Lamos et al. nor Husar disclose an insulating foil mask in the transport layer.

Oloman et al. disclose a device for conducting reactions wherein the device comprises a pair of electrodes and a porous, hydrophilic insulating material separating the two electrodes (see claim 1). The porous insulating material permits free flow of liquid between the electrodes while providing electrical insulation between the electrodes. In light of the disclosure of Oloman et al., it would have been obvious to one of ordinary skill in the art to provide a hydrophilic, porous insulating layer in layer 504 of the modified Lamos et al. device so that flow of liquid between the electrodes is permitted while providing electrical insulation between the electrodes.

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Claim **14** is rejected under 35 U.S.C. 103(a) as being unpatentable Lamos et al. in view of Husar as applied to claims 1, 2, 6-8, 15-19, 21 and 22 above, and further in view of Stapleton et al. (US 5,922,604).

Although Lamos et al. disclose that the working electrode in the channel of the sensor can comprise a reagent, neither Lamos et al. nor Husar disclose the use of dry reagents.

Stapleton et al. disclose a microfluidic device comprising reagents immobilized to the surface of the microfluidic channels wherein the reagents are dry (see lines 40-50, col. 11). In light of the disclosure of Stapleton et al., it would have been obvious to one of ordinary skill in the art to provide dried reagents to the modified Lamos et al. device since dry reagents have longer shelf lives.

Claim **20** is rejected under 35 U.S.C. 103(a) as being unpatentable Lamos et al. in view of Husar as applied to claims 1, 2, 6-8, 15-19, 21 and 22 above, and further in view of Crismore (US 5,997,817).

Neither Lamos et al. nor Husar disclose a transparent window.

Crismore et al. disclose an electrochemical sensor comprising a capillary channel. The sensor comprises an optical window so that the user can determine whether the sensor is filled with a sample (see lines 55-65, col. 13). In light of the disclosure of Crismore et al., it would have been obvious to one of ordinary skill in the art to provide a window to the modified Lamos et al. sensor so that the user can determine whether the sample has been taken up by the sensor.

### ***Response to Arguments***

Applicant's arguments with respect to the claims have been considered but they are moot in view of the new grounds of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAUL S. HYUN whose telephone number is (571)272-8559. The examiner can normally be reached on Monday-Friday 8AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571)-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Paul S Hyun/  
Examiner, Art Unit 1797

/Jill Warden/  
Supervisory Patent Examiner, Art Unit 1797